

WHAT IS CLAIMED IS:

1. A medical valve for selectively permitting fluid to flow between a first medical device and a second medical device, the valve comprising:

a housing having an interface suitable for receiving a connector portion of the first medical device; and

a seal made of a flexible material, the seal having a downstream end in fluid communication with the interface, an upstream end suitable for receiving at least a portion of the second medical device, and a normally substantially closed passage in fluid communication with the downstream end and the upstream end, the passage being relatively wide in the region of the upstream end and the passage being relatively narrow in the region of the downstream end, the passage adapted to have a relatively small interior volume when in an undisturbed state and a larger interior volume upon the introduction of the second medical device into the upstream end of the passage, the passage adapted to retract to define a restricted flow path and a relatively small interior volume upon the withdrawal of the second medical device from the seal, the upstream end adapted to initially be substantially sealed against the inserted portion of the second medical device as the second medical device is withdrawn, so that a fluid occupying the interior volume is forced toward the downstream end as the passage walls collapse.

2. The medical valve defined in Claim 1, wherein the seal comprises:

a lead lumen formed in the downstream end of the body and in fluid communication with the passage;

a neck formed in the upstream region of the seal; and

a transverse flange in the upstream region of the seal, the transverse flange having at least one opening in fluid communication with the passage.

3. The medical valve of Claim 2, wherein the lead lumen is centered on an axis substantially parallel to or collinear with a longitudinal axis of the seal.

4. The medical valve of Claim 2, wherein the seal comprises a substantially rectangular slab of flexible material and the neck is coplanar with the body.

5. The medical valve of Claim 1, wherein the passage in the undisturbed state tapers inwardly from the upstream end to a region of minimum width.

6. The medical valve of Claim 5, wherein the passage in the undisturbed state tapers outwardly from the region of minimum width toward the downstream end.

7. The medical valve of Claim 2, wherein the seal has first and second lateral portions and the housing further comprises:

a seal holder attached to the interface, the seal holder comprising a hollow cylindrical member that extends from the interface and has an axial opening opposite the interface, and first and second side openings;

a lead cannula attached to and in fluid communication with the interface and extending from the interface toward the axial opening,

wherein the seal is disposed within the seal holder such that the lead cannula extends at least partially into the lead lumen, the flange extends across the axial opening, and the first and second lateral portions of the seal body extend into the first and second side openings.

8. The medical valve of Claim 7, wherein the lead cannula is centered on an axis substantially parallel to or collinear with a longitudinal axis of the housing.

9. The medical valve of Claim 1, wherein a lead cannula attached to and in fluid communication with the interface extends from the interface into the downstream end of the seal, an end of the lead cannula being disposed within the passage at a location in the upstream direction from the furthest downstream periphery of the interior volume of the seal.

10. The medical valve of Claim 7, wherein the seal is adapted to move within the housing in the downstream direction upon insertion of the second medical device and to move within the housing in the upstream direction upon withdrawal of the second medical device.

11. The medical valve of Claim 10, wherein the lead lumen of the seal expands as the seal moves in the downstream direction and the lead cannula extends further into the interior of the passage of the seal.